

PRISM MICROFABRICATION LABORATORY RULES
10/19/07

Rule #1 – safety

Safety is an overriding rule in all clean room activities. All operations must be undertaken with the safety of both the individual user and other users as the primary consideration. Ignorance of the rules, working under “pressure”, lack of common sense, language difficulties, carelessness, and haste are not adequate excuses for unsafe behavior. If you are tired or do not have time to do things correctly and safely, with adequate time for thought, please stay home. Anyone violating any safety rule or otherwise compromising his or her personal safety or the safety of the others will be denied access to the clean room.

Rule #2 – peer pressure

Your safety in the clean room is determined not only by your actions, but by the actions of those around you. Point out rule violations or unsafe behavior immediately to the offenders, as well as later to the clean room management. Inappropriate reactions by individuals to such corrections should also be reported. The access of everyone to the clean room depends on maintaining a safe working environment. A series of thoughtless chemical violations or a single serious personal injury could result in severe restriction on the clean room use or closing of the clean room.

Rule #3 – courtesy

The clean room is a workplace for over 100 users. The users are not allowed to change common recipes, leave vacuum chambers vented, process unusual samples in equipment restricted to a particular sample type, or leave the equipment in a state unfamiliar to the others. All unattended chemical bottles, beakers, etc., must be labeled or otherwise warn other users of their contents. Users are required to clean up any work area (counters, equipment, floors) they have been using. This may mean cleaning up areas that have been dirtied by others. Users are expected to report immediately any problem with the equipment to the clean room management and note it in the logbook.

Clean room Usage

- The clean room will be entered and exited by the showers – using his/her OWN proxy card.
 - o One and only one user will enter the clean room shower at a time.
 - o Everyone must wear a badge and take the whole 15-second air shower.
 - o No other entrance/door is to be used unless in an emergency situation.
- Users will wear a full clean room suit. This will include a hood, tucked into a clean room suit, with boots.
- Appropriate eye protection will be worn. The minimum acceptable will be safety glasses. Splash goggles will be worn when working at any hood.
- Suits and hoods will be replaced every seven days of use, or if dirty or torn.
- Boots will not be stored in lockers.
- Undergraduate students can work during regular business hours Monday through Friday, 9:00 am to 5:00 pm. In addition, during the fall and spring semesters they are allowed to work if monitors are present (typically Monday through Thursday, 5 pm to 10 pm and Saturday, 1 pm to 6 pm).
- Other users can use the facility 24/7 based on restrictions in following sections.

Equipment Usage

- Only authorized personnel are allowed to use the clean room equipment unsupervised.
- To become an authorized user you must be trained by a superuser, and given authorization by Mikhail Gaevski, Helena Gleskova, Joseph Palmer, or Conrad Silvestre.
- No user will be held responsible for accidental equipment damage if he/she notifies PRISM staff of such damage in a timely manner.
- Whenever a piece of equipment is used, the logbook will be filled out, without exception.

Equipment Reservation

- Authorized users must reserve equipment that they plan on using for longer than 15 minutes (<http://poe-nostromo.princeton.edu/>).
- Equipment reservation is limited to 3 consecutive hours of time on most machines. The following exceptions apply: PlasmaTherm 790 PECVD - 5 hours (suggested from 8am-1pm and 1-6pm), Thermco furnaces - 24 hours, Tystar tube #1 (oxidation) - 24 hours, Tystar tubes #2, 3, & 4 - 12 hours, AJA dielectric sputterer - 10 hours, Angstrom sputterer - 10 hours, and Heidelberg laser writer – 72 hours.

- Any user who has reserved equipment and who does not show up within 15 minutes of the reserved time can be “bumped” from his/her reservation.

Outside User Equipment Reservation

- Non-academic clean room users can only reserve equipment Monday through Friday.
- On those days, the following limits are placed on the amount of time reserved (in total) by all non-Princeton entities:
 - o 9:00 am to 5:00 pm a maximum of 3 hours total
 - o 5:00 pm to 11:00 pm a maximum of 2 hours total
 - o 11:00 pm to 9:00 am – no time limit
- Extensions will be granted on a case-by-case basis, as some equipment will by necessity take longer than 5 hours to use.

Restricted Equipment & Use of Lab

- All equipment can be used by authorized personnel during normal business hours, Monday through Friday, 9:00 am to 5:00 pm. Otherwise the following restrictions apply:

Monitor or Buddy present in the room	Monitor or Buddy checking on the user every 30 minutes	No Monitor or Buddy required
<ul style="list-style-type: none"> • All solvent and acid hoods in Plasmatherm 790 and Box Room 	<ul style="list-style-type: none"> • Plasmatherm 790 • Plasmatherm SLR • Astex ECR etcher • All Tystar CVD furnaces • Hoods in the lithography room • Hoods in the Metals Room 	<ul style="list-style-type: none"> • All other equipment

Monitor Requirements and Duties

- Monitor must be located in the clean room at the time of duty.
- Monitor’s name and the time of duty must be displayed on the entry doors to the clean room.
- Monitor must check all users in all clean room areas every 30 minutes and fill out a “Monitor sheet”.
- Monitor must be present in the room, if any user is working in any solvent or acid hood, other than the hoods located in the photolithography room.

Buddy Requirements and Duties

- Buddy must be a registered clean room user and be located in the E-Quad at the time of duty.
- He/she must check up on the user every 30 minutes.
- If the user is working in any solvent or acid hood, other than the hoods located in the photolithography room, the Buddy must be present in the room.

Additional User Duties

- All users (excluding undergraduate students and industry users) are required to monitor.
- Interested users may serve as superusers or clean room committee members. The remaining users are obligated to spend 1 day a year helping out in the clean room, namely during the quarterly cleanings.

Guests

- All guests must be cleared by Joseph Palmer or Helena Gleskova ***before*** entering the clean room.
- No guests are allowed to process or use equipment.
- Guests are admitted to the clean room for the purposes of a tour or observation ***only***.

BREAKING THE RULES

First Offence: Removal of clean room privileges for two weeks.

Second Offence: Removal of clean room privileges for two months.

Third Offence: Permanent removal of clean room privileges.

The above are MINIMUM penalties. For grievous violation of the rules, more severe penalties will be inflicted.